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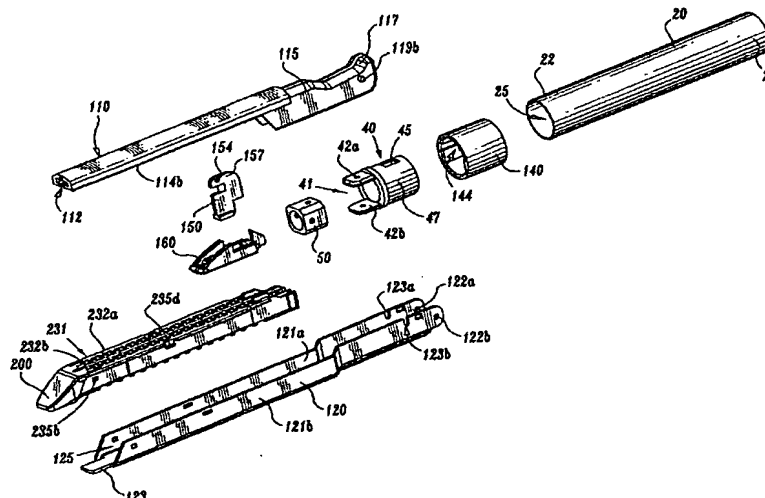
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(54) Title: SURGICAL STAPLER WITH UNIVERSAL ARTICULATION AND TISSUE PRE-CLAMP



(57) Abstract: A tool assembly for a surgical stapling device includes a channel member for supporting a staple cartridge therein and an anvil to deform a plurality of staples ejected from the staple cartridge thereagainst. The tool assembly also includes a sled which is movable to force the staples from the cartridge against the anvil to staple tissue disposed between the anvil and the staple cartridge. A dynamic clamping member is included which has a pin which movably engages the anvil and a flange which movably engages the channel assembly. The dynamic clamping member is mounted to and movable with the sled. The pin and the flange of the dynamic clamping member cooperating to oppose the forces associated with clamping and stapling tissue and also to maintain a substantially uniform gap between the anvil and the staple cartridge during stapling of the tissue.

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61B17/072

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 520 817 A (GREEN DAVID T) 4 June 1985 (1985-06-04)	1-8, 15, 16, 19, 20
Y	column 5, line 54 -column 7, line 33 column 7, line 40 -column 8, line 63 figures 3-7, 20	12-14
X	US 5 954 259 A (GRANGER RICHARD N ET AL) 21 September 1999 (1999-09-21)	1, 2, 4, 5, 7, 8, 15-20
	column 4, line 5 - line 17 column 5, line 44 -column 7, line 12 column 7, line 56 -column 8, line 17 figures 1, 5, 9, 10	
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
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\*&\* document member of the same patent family

Date of the actual completion of the international search

27 May 2004

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- 9. 06. 2004

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## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/JP 03/31716

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 478 003 A (MCCLURE RICHARD C ET AL) 26 December 1995 (1995-12-26)	9-11
Y	column 15, line 25 -column 16, line 20 column 38, line 37 -column 39, line 16 figures 16,90,90A ---	12-14
X	US 4 566 620 A (GREEN DAVID T ET AL) 28 January 1986 (1986-01-28) column 3, line 27 - line 59 figure 1 ---	9,10
A	US 5 918 791 A (ALLI ALIM ET AL) 6 July 1999 (1999-07-06) column 17, line 8 - line 19 figures 32-34 -----	6

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 03/31716

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-8,15,16,19,20

Stapler head assembly having means to maintain a uniform gap between the anvil and staple cartridge during stapling.

2. Claims: 9-14,17,18

Articulated surgical stapling device having a universal articulation at the distal end of the shaft, to which a stapling tool is coupled.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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